



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,227	10/28/2003	Jason D. Hatton	LMS3072P0310US (LS-039)	4959
32116	7590	11/16/2005	EXAMINER	
WOOD, PHILLIPS, KATZ, CLARK & MORTIMER 500 W. MADISON STREET SUITE 3800 CHICAGO, IL 60661			KHAIRA, NAVNEET K	
			ART UNIT	PAPER NUMBER
			3754	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,227

Applicant(s)

HATTON ET AL.

Examiner

Navneet Sonia Khaira

Art Unit

3754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 21, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 is/are allowed.
- 6) ☒ Claim(s) 5-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejection under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Maddox (US 6,216,916).

Referring to claim 5, Maddox et al further discloses peripheral mounting flange (51b) for a resilient, pressure-actuatable valve that can discharge a fluid product in an outward flow direction (col 2, lines 63-67) and that has a head defining a normally self-sealing closed dispensing orifice (col 3, lines 1-5) and having a sleeve extending from the periphery of the head, the peripheral mounting flange being adapted for being retained by a retention wall (60, figs 5 and 6) that is inelastically deformed against the peripheral mounting flange (51b) said peripheral mounting flange comprising:

resilient material (col 4, line 39) extending from the periphery of the sleeve (61) as a unitary extension of the sleeve in a generally annular configuration about a longitudinal axis that extends axially inwardly (fig 6) and axially outwardly (fig 5) relative to the flow direction, the generally annular configuration being located around and radially outwardly (fig 8, 60) of the

Art Unit: 3754

longitudinal axis, said resilient material having a surface region defined at least in part by the following surfaces:

a first surface (rim surface between 62 and 61) extending generally axially outwardly from said sleeve;

a second surface (62, fig 8) extending generally axially inwardly from said sleeve;

a third surface (fig 8, surface which 100 points to) extending both generally axially outwardly and radially outwardly from said first surface; and

a fourth (fig 8, the middle rim of part 100) surface extending both generally axially inwardly and radially outwardly from said second surfaces so that the third and fourth surfaces generally diverge.

Referring to claims 6-9, Maddox further discloses the valve peripheral mounting flange with a fifth, sixth, seventh, eighth, ninth and tenth surfaces (fig 4, the surfaces between 60 and 50) extending generally axially inwardly and outwardly.

Referring to claim 10,

A. a diaphragm (60) of resilient material molded to define

(1) a resiliently deformable, pressurizing portion that (a) has an undeformed convex configuration as viewed from the exterior (60, fig 8), and (b) defines a concave receiving region (90, fig 5) as viewed from the interior for pressurizing fluid;

Art Unit: 3754

(2) a connecting member (100, fig 8) lines extending from the periphery of the pressurizing portion; and

(3) a mounting flange (51b) that extends generally radially from the periphery of the connecting member (100), is thicker than the connecting member (fig 8), has a first surface (top rim of 51e) extending outwardly from the connecting member in the direction toward the exterior, and has a second surface (51c) extending inwardly from the connecting member in the direction away from the exterior;

B. a pump housing (fig 4) defining an inlet (52a) and outlet (201) and further including a retention structure for retaining the diaphragm and mounting flange, the retention structure (54, fig 8) including a projecting wall that has a lateral surface (51c) facing toward said diaphragm connecting member (100) and an end surface (51a) facing toward said diaphragm mounting flange second surface, the wall end (51a) surface being spaced from the diaphragm connecting member (100) when the pump is not pressurizing the fluid (fig 5), the wall lateral surface (51c) being spaced from the diaphragm mounting flange second surface when the pump is not pressurizing the fluid (fig 6) whereby assembly of the diaphragm into the pump housing is facilitated.

Referring to claim 11, Maddox et al further discloses the mounting flange (51b) second surface (51c) defines a substantially interior cylindrical surface (fig8).

Art Unit: 3754

Referring to claim 12, Maddox et al further discloses in which the connecting member (54) is arcuate.

Referring to claim 13, Maddox et al further discloses the connecting member (54, fig 8) defines a convex (60, fig 8) surface projecting toward wall end surface (fig 5).

Referring to claim 14, Maddox et al further discloses at least a portion of the retention structure (54) projecting wall lateral surface (51c) is engageable by a portion of the mounting flange when said pump is pressurizing said fluid (fig 6).

Referring to claim 15, A diaphragm for a pump, said diaphragm comprising:

A resilient material molded to define

(A) a resiliently deformable, pressurizing portion that includes an undeformed convex configuration (60, fig 5) when viewed from the exterior, and defines a receiving region (201, fig 5) under said convex configuration (60) for receiving fluid that can be pressurized by deforming (60, fig 6) said pressurized portion;

(B) a stress isolation connecting member (54, fig 8) extending from the periphery of said pressurizing portion, said stress isolation connecting member having a non-linear cross-sectional configuration; and

Art Unit: 3754

(C) a mounting flange (51b) that extends from the periphery of said stress isolation (54, fig 8) connecting member, and can be disposed in a retention structure of said pump (fig 8).

Referring to claim 16, Maddox et al further discloses a diaphragm includes an annular base wall around the bottom of said pressurizing portion; and in which said stress isolation connecting member has an arcuate cross section (62) and connects said annular base wall (61) with said mounting flange (51b).

Referring to claim 17, Maddox et al further discloses the arcuate cross section is of uniform thickness over at least a major portion of its radial length fig 5).

Referring to claim 18, Maddox et al further discloses the arcuate cross section defines a concave annular channel (60) around the pressurizing portion as viewed from the exterior (fig 6).

Referring to claim 19, Maddox et al further discloses a diaphragm (60) for a pump having a retention structure that includes an inelastically deformable exterior retention wall, the diaphragm comprising:

A resilient material molded to define a unitary member having (fig 4)

(A) a resiliently deformable (60), pressurizing portion (60) that has an undeformed convex (fig 5) configuration as viewed from the exterior, and defines

Art Unit: 3754

a concave (fig 6) receiving region as viewed from the interior for pressurizing fluid; and

(B) a mounting flange (51b) that is connected with the periphery of the pressurizing portion (60), can be disposed in the pump (fig 5) so that the exterior retention wall can be inelastically deformed against the mounting flange (fig 6), and had a generally annular configuration of resilient material (col 4, line 39) extending from the periphery of said sleeve (100) wherein said material having a surface region defined in part by the following surfaces

(a) inner (51c, fig 8) and outer (100) diverging surfaces wherein the inner diverging surface is inwardly of the location of the connection (54) of the flange to the pressurizing portion and wherein the outer diverging surface (101) is outwardly of the location of the connection (54) of the flange to the pressurizing portion;

(b) a first corner surface (the rim 100 points to in fig 8) extending from the outer diverging surface;

(c) a laterally extending surface (the middle rim) extending from the first corner surface;

(d) a second corner (the inner most rim) surface extending from the laterally extending surface.

Referring to claim 20, the diaphragm pump in which the surface region of the generally annular configuration of resilient material (60) further includes a laterally peripheral surface (61) that has an outer margin (outer rim) and an inner

Art Unit: 3754

margin (inner rim) wherein the outer margin is located laterally further from the pressurizing portion than is the inner margin (fig 8).

Remarks

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 1-4 are allowed.

Citation of Related Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gross et al (US 5,676,289), Gross (US 6,089,419) references also disclose a pressure-actuated valves. WO02/16047 reference also disclose a pump dispenser with a diaphragm.

Conclusion

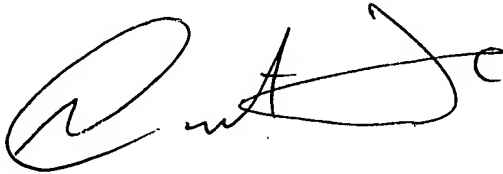
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Navneet Sonia Khaira whose telephone number is 571-272-7142. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mar Y. Michael can be reached on 571-272-4906. The fax

Art Unit: 3754

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Navneet Sonia Khaira
Examiner
Art Unit 3754

NK



MICHAEL MAR
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700